R E P O R T R E S U M E S

ED 011 145 EA 000 373

PROGRAM BUDGETING FOR EDUCATION.

BY- HIRSCH, WERNER Z.
CALIFORNIA UNIV., LOS ANGELES

REPORT NUMBER FR-63 PUB DATE 19 MAY 66
EDRS PRICE MF-$0.09 HC-$1.76 44P.

DESCRIPTORS- *PROGRAM BUDGETING, STATE FEDERAL AID, NATIONAL PROGRAMS, *EDUCATIONAL FINANCE, FEDERAL AID, *EDUCATIONAL OBJECTIVES, EDUCATION, EDUCATIONAL PROGRAMS, *COSTS, *EDUCATIONAL BENEFITS, CENTRALIZATION, LOS ANGELES

THE APPLICATION OF PROGRAM BUDGETING TO EDUCATION IS RECOMMENDED. A NATIONAL-LEVEL PROGRAM BUDGET EXAMPLE IS PRESENTED, WITH SUGGESTIONS FOR OBTAINING MORE EFFECTIVE MANAGEMENT OF EDUCATION. FINANCING OF EDUCATION IN THE UNITED STATES IS CURRENTLY UNDERTAKEN BY MORE THAN 40 AGENCIES OF THE FEDERAL GOVERNMENT, 50 STATE GOVERNMENTS, AND MORE THAN 30,000 SCHOOL DISTRICTS. EFFICIENT AND EQUITABLE PLANNING AND BUDGETING IS THUS A FORMIDABLE TASK. FURTHER RESEARCH AND DEVELOPMENT IN PROGRAM BUDGETING IS SUGGESTED TO INCLUDE (1) EXPLICIT DELINEATION OF GOALS, (2) BETTER IDENTIFICATION, MEASURING AND PACKAGING OF COSTS AND BENEFITS, (3) DEVELOPMENT OF BACKUP ADMINISTRATIVE ORGANIZATION, AND (4) MORE ATTENTION TO FUTURE ENVIRONMENTS. THE REPORT RECOMMENDS THE ESTABLISHMENT OF A FEDERAL DEPARTMENT OF EDUCATION. THIS PAPER WAS PRESENTED AT THE NATIONAL MEETING OF THE OPERATIONS RESEARCH SOCIETY OF AMERICA (29TH, SANTA MONICA, MAY 19, 1966). (HW)

ED011145

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Werner Z. Hirsch*

MR-63

INSTITUTE OF GOVERNMENT
AND PUBLIC AFFAIRS
UNIVERSITY OF CALIFORNIA, LOS ANGELES

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Werner Z. Hirsch*

MR-63

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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Paper presented at the 29th National Meeting of the
Operations Research Society of America, Santa Monica, California
May 19, 1966

*I am indebted to Mr. Charles Carey and Mr. Morton Marcus of the Institute of Government and Public Affairs, University of California, Los Angeles, for their helpful comments and criticisms; and to Mr. B. P. Pai for statistical assistance. Responsibility for this paper remains with the author.

PROGRAM BUDGETING FOR EDUCATION

INTRODUCTION

Education today is one of America's largest industries. There are 125,000 schools and 2,500 colleges and universities in the country, in which more than 50 million students are being taught by more than 2 million teachers. In dollar costs, primary and secondary education in 1964 accounted for $24 billion; higher education, $9.6 billion. Research and development in educational institutions and research centers amounted to $1.9 billion. About half a billion dollars was spent on adult education, a quarter of a billion dollars on library services and $64 million on foreign education. While no final figures are available for fiscal year 1965, we estimate total expenditures increased over 1964 by about 10 percent to $40 billion, with the major relative increases occurring in higher and adult education.

Education funds are raised by private institutions and by Federal, State, and local governments. The role of Federal and State governments has been increasing in recent years. In fiscal year 1960 the Federal government raised $2.8 billion, or 10 percent of the total; five years later Federal funds going into education amounted to $6.5 billion or 16 percent.

The job of managing this vast undertaking of education is distributed among more than forty Federal agencies, fifty different State governments, and some 30,000 individual school districts involving more than 100,000 administrators and supervisors, 180,000 board members, and ultimately the public at large.

The United States, no less than other nations, must allocate its resources wisely, in education as in other major missions, if it is to make progress toward its goals. Thus, we must ask not only how much should we spend on education, but also how can we spend it most effectively.

One of the basic instruments for decision makers and managers, is of course, the budget. The problem is that the design of existing budgets has evolved over many years, shaped mainly by the desire to safeguard appropriations against carelessness or malfeasance. They were not designed to assist analysis, planning or decision making. The traditional educational budget categories, used at Federal, State and local levels, do not allow one to relate required resources (costs) directly to the specific outputs or goals to be achieved. Thus current budgetary systems cannot, in their existing form, substantially assist officials in deciding how to allocate scarce resources efficiently among the ever-increasing number of competing activities or goals. Current budget structures inhibit the coordination of interrelated decisions, obscure the full-costs of decisions, and prevent the articulation of relevant alternatives in the light of their trade-offs.

In short, a budget has been a comptroller's budget, rather than a manager's budget.

Programmed budgeting is intended to help overcome some of these shortcomings. Further, the program budget structure should allow one to make improved projections of future education expenditures, for more effective long-term planning.

This paper will first discuss some key concepts of program budgeting, it will apply them to education and develop an example of a program budget at the national level, indicate its uses for education, and finally discuss a number of suggestions for moving us closer to the goal of more effective management of education.

SOME PROGRAM BUDGETING CONCEPTS

Program budgeting is a planning and management process; a program budget is an instrument that structures certain fiscal information used in this process. The purpose of this approach is to help the decision makers at various levels to relate the activities for which they are responsible to goals of their organizations, and to allow them to make rational compromises in allocating resources among competing objectives so that goals can be attained with a high degree of efficiency.

Program budgeting at the national level would be more simple, complete, and effective in a country where the major allocative decisions are made by a central authority, than in the United States. Here resources are allocated through a multitude of decision makers in both the public and private sectors. Here individuals make decisions about education either directly or indirectly through choosing and guiding their elected representatives. The resulting decisions affect the provision and financing of education and also the environment which influences such decisions. A schematic design of an overall program budget for education is presented in Figure 1; it indicates the dollar expenditures of both government and private units for resources that are put to work to fulfill the nation's educational goals. In this Figure our concern is with the column headings; the programs will be discussed below. The appropriate column for a particular entry would be governed according to the unit which has the authority for allocating funds to a particular activity, not according to the unit that enters the marketplace to secure the resources, nor the unit that ultimately pays the bill, although such organizations of data have their uses.

Figure 1

A SCHEMATIC VIEW OF A NATIONAL EDUCATION PROGRAM BUDGET
FOR A SINGLE YEAR

Programs	Expenditures						Total Expenditures	Adjustments For Transfers & Imputed Costs	Total Social Costs
	Government			Private					
	Federal	State	Local	Business	Non-Profit Organi-zations	House-holds			
1. Primary Education									
2. Secondary Education									
3. Higher Education									
4. Adult Education									
5. Library Services									
6. Research & Development									
7. Inter-national Education									

While a program budget of the nature indicated in Figure 1 would assist a decision maker in understanding the role of his particular organization in relation to the goals of the nation, the budget of his own organization is often the only one he can effect. Though it is true that the Federal, State and local governments can influence the expenditures of other units by providing incentives and prohibitions, the pressing allocation problems facing each decision maker concern the resources directly available to him.

Program Budgeting Aspects

The program budgeting process has three major aspects: structural, analytical, and administrative-organizational. Each of these will be discussed below, and is summarized in Table I.

Structural Aspects. Program budgeting relies on a structured program budget. The chief feature of this budget is its output orientation; that is, it allows the activities of several agencies or departments to be assembled in terms of specific output packages -- i.e., programs and sub-programs, of various convenient levels of aggregation. For example, one of our goals is the economic and social development of our human resources. We can identify some of the policy instruments that would help us achieve this broad goal. That is, we can identify where allocation decisions must be made; for example, for a vocational retraining program to develop new skills of our work force, and for a college education program for improving the level of scholarly, scientific and artistic contributions in the United States. These two programs compete with each other for resources. Each in turn is made up of alternative sub-programs which compete with each other for resources as inputs for achieving the specific program objectives. Thus, teaching to operate a turret lathe, and physical therapy, can be viewed as

Table I

PROGRAM BUDGETING -- A PLANNING-MANAGEMENT PROCESS

A. Structural Aspects: The program budget -- a device for structuring and organizing expenditure information.

1. Arranges cost data in terms of programs and sub-programs that can be:

   a. Oriented to specific outputs and goals, which can be expressed, at least partially, in quantified terms.

   b. Are clearly delineated, with a minimum overlapping and interaction with other programs, and which bundle components that are in close competition with each other.

   c. Are broken down into operationally useful building blocks (manpower, material, equipment, etc.) which can be combined to yield various alternative sub-programs.

2. Contains expenditure and/or obligational authority information, with the addition of other social cost information where possible.

3. Covers an extended time horizon; e.g., contains data for as long as five years into the future.

B. Analytical Aspects: Involves use of analytical tools in systematically examining alternative courses of action and their implications.

1. Example of one such tool: Benefit-cost analysis, which uses expenditure information appearing in the program budget, plus additional information (indirect costs, benefits, spillovers).

2. Analysis also includes consideration of various uncertainties and their implications for planning and budgeting as well as investigations into objectives and different ways of reaching them.

C. Administrative-Organizational Aspects: Provides a basis for administering, enforcing, and revising allocative decision.

alternative forms of vocational training, and are more competitive with each other than they are with studies of political science, chemistry, and philosophy, which may compete with each other under the education program for improved scholarship. Ultimately the program budget extends down to the input level of basic building blocks of the various required resources: manpower (teachers, administrators, etc.), materials, equipment, buildings, etc. and may be combined and recombined in various ways to specify packages in the output hierarchy. This method of breaking down and combining data allows a decision maker to reconstruct the program budget at his particular level of responsibility accorded to articulated objectives or goals. Its flexibility allows for convenient reformulation to accommodate changes in interests and objectives.

The program budget format requires that outputs be to some extent quantifiable so that projected expenditure data which appear in the budget can be meaningfully related to projected performance. The data in the national program budget of this paper are primarily in the form of expenditures, though it is often necessary to rely on obligational authority to allow the current budgetary information to be refined for restructuring in program form. Ideally we would like to have social cost data in the budget.

The final structural aspect of the program budget is its extended time horizon. The traditional organization of budgetary data rarely offers a profile of the future expenditures linked to or implied by current investment decisions. But to make rational choices, the decision maker must know something about the future expenditure implications of decisions he makes today. What will be the annual operating costs of a building proposed for construction now? Thus the time horizon of the program budget necessarily extends several years into the future. Naturally such projections involve

uncertainties, and these must be made explicit so that long-range planning does not involve commitments predicated on a naive extension of our current perspective.

Analytical Aspects. To make a rational choice in allocating resources, one must evaluate the relative merits of the alternative choices, for example, of spending an additional billion dollars on facilities for higher education or on retraining workers displaced by automation.

The economic theory of choice over time in general and trade-off analysis in particular has been discussed in other places and only a few comments are needed here.[1] Rational choice requires certain analytical tools which are an integral part of the program budgeting process. These tools in turn require systematic examination of data given in the program budget, plus other information.

One of the more important analytical tools is benefit-cost analysis, referred to by some as cost-utility analysis or cost-effectiveness analysis. In addition to expenditure information given in the program budget, it requires information on indirect costs, benefits, spillovers, and so on. Benefit-cost analysis relates total resource costs to benefits produced by a particular program. It permits us to use explicit criteria and systematically compare several alternative courses of action that might achieve a certain objective for some future time period. In the simplest case, where

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1. For example, Charles J. Hitch and Roland N. McKean, The Economics in Defense in the Nuclear Age (Cambridge, Massachusetts: Harvard University Press, 1960) pp. 109-118 and pp. 182-187, and Arthur Smithies, Government Decision-Making and the Theory of Choice (Santa Monica, California: The RAND Corporation, 1964) p-2960, 11 pp.

all benefits and costs are measurable in a common unit, e.g., dollars, economic efficiency requires we maximize the present value of net benefits. Unfortunately, difficulties arise from a number of incommensurables: benefits and costs cannot all be expressed in a common unit of measurement, the problem of selecting appropriate discount rates, the selection of proper criteria, the presence of uncertainty, and data problems in general.2/

Benefit-cost analysis also involves the careful, explicit treatment of uncertainties and their implications for planning and budgeting. These arise largely because of the extended time horizon required for rational decisions in such major fields as education. Three major tools for handling these uncertainties are sensitivity analysis, contingency analysis, and a fortiori analysis.

In sensitivity analysis several values (e.g., high, medium, low) are used for very uncertain parameters, as in the case of population growth rates, so we can see how sensitive results are to these variations.

Contingency analysis is used to investigate how the preference ranking of alternatives is affected by changes in relevant evaluation criteria, or when major change in the general environment is assumed. What would happen if counties A and B, which comprise a metropolitan area, consolidated and agreed to use the same property tax assessor and collector, together with the same tax rates? A comparison of the results under the old and the new contingencies might be revealing, regardless of how likely they are to occur.

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2. For example, if the value of one of the outputs (benefits) can be measured in dollars but that of a second output only in other units, it is possible to show the minimum dollar value which one must attach to the incommensurable output or source increment, in order to prefer it over the output which can be measured in dollars. However, there does not exist a clear-cut decision criterion. Often the best one can do is to display the incommensurables and make general trade-off judgment about them.

In a fortiori analysis, one makes the strongest possible case against one or another alternative. Suppose that in planning the school district headquarters facilities, the generally accepted "intuitive" judgment is in favor of locating them at site A. Yet we would like to be convinced that A is a good choice in preference to site B. The comparison between A and B can then be made in a way which resolves the major uncertainties in favor of A, and we then ascertain how B compares under these "adverse" conditions. If, after having stacked the cards against location B, it is still a preferred solution, we have a very strong case in favor of B.

Administrative-Organizational Aspects. Once we have devised a program budget, and with the aid of analytical tools reached budgetary decisions, a means must be found for their administration and possibly their revision. Ideally, we would prefer that relevant administrative functions be shifted into the jurisdiction of officials who make the final program decision. But steps for such a reorganization are not likely to be taken soon. Program budgeting is likely to face much opposition within the Federal establishment and at other levels as well, where there has been a historical reliance on the administrative budget. Thus, makeshift arrangements are likely which must include the development of effective information systems, decision-making processes, and means to insure compliance with program decisions, once they have been made.

APPLYING ECONOMIC THEORY OF CHOICE AND PROGRAM BUDGETING TO EDUCATION

In applying program budgeting to education, we must be aware of some unique characteristics of education which present certain inherent difficulties. These are but a few of the major complications: All three levels of

government -- Federal, State, local -- join the private sector in offering education services. The resulting fiscal and political interrelations are very complex. Education creates human capital which produces delayed, long-lasting benefits. These benefits are attached to the educated person, and as he changes his residence, the benefits move with him and spill over boundaries of political jurisdiction. Cost burdens also spill over political boundaries through taxation. These benefit and cost spillovers seldom behave in a harmonious manner; they do not inherently tend to offset and neutralize one another. Finally, we must remember the great difficulties in measuring education benefits.

With these issues in mind, let us continue to examine the structural, analytical, and administrative-organizational aspects of program budgeting, but now with particular reference to education. This is, perhaps, best done by reviewing some key education objectives, which in turn should help us identify useful program data building blocks.

Goals and Program Budget Structure

We would like to relate education programs and sub-programs of various levels directly to both personal and national goals and aspirations. This is particularly difficult for education goals expressed in terms of inadequately defined abstractions, intangibles, or grand designs. Short of this, however, we can state the goals of education as including the preparation of individuals for rewarding employment, effective use of leisure, adequate income, effective family membership, fulfillment of civic and social responsibilities in our society, and so on. Let us consider such goals further. In our affluent industrial society the time the average citizen spends working for income has been declining. The reason is the large-scale increases in

productivity, in part the result of effective education. Yet, much of today's school and university curriculum is still designed with the primary goal of enhancing income opportunities of citizens.

The attitudes and skills one needs to make satisfying contributions to his present or future family and home often are difficult to identify and define. Moreover, one can argue that this type of learning is the responsibility of home and church. Nevertheless, even if we accept this view, the school teaches subjects which contribute to the family: domestic arts, including cooking, home maintenance, personal finance, hygiene, and some psychology which helps one to understand the various roles and desires of family members at different points in their lifetimes.

As more free time becomes available in our affluent society, we face the need of spending leisure more meaningfully and enjoyably. Schools can contribute here through teaching the cultural arts of music, painting, dancing, recreations such as crafts and sports; and even scholarly pursuits.

The individual discharges his responsibility as a member of a democratic society through civic and social participation. Schools help citizens here by providing them with a better understanding of the history of their country and the world, of the crucial events of their times, and of the motivations which guide men's actions.

Though we might agree on these broad education goals, it is difficult to isolate education activities which contribute exclusively to any one of them. Rather, schools and universities contribute to two or three of these at the same time. Nevertheless, identification of these goals can be helpful in a variety of ways. For example, one can argue in a global frame of reference that urbanized, affluent societies can spend more to meet the [illegible]ure objective at a time that the developing nations must emphasize the

objectives of increasing employment and income. Serious data problems prevent us, however, from working with education sub-programs of this sort.

To identify more tractable operational sub-programs, let us examine a schematic presentation of the lifetime flow of students through the formal education system (see Figure 2).[3]

Virtually all individuals attend the primary grades and some years of high school. Most high school education is college preparatory; some is explicitly vocational. Students from the vocational programs generally progress into the labor force (and the non-working population) or into junior college. Students from college preparatory courses enter junior colleges (including the Service academies) or undergraduate divisions of universities. Part of the junior college students enter four-year colleges to work toward their bachelor's degree; part of the college and university population continues in graduate and professional schools of universities.

Regardless of whether they have a college education, Americans can participate in a variety of adult education activities. Various extension programs and retraining courses are open to them. There are federally financed activities designed to help veterans, government employees, and farmers.

In short, education approximates a vertical structure, with lower levels generally leading to higher ones and with special adult training and retraining programs offering some shortcuts and flexibility.

In line with this view we might want to look upon the output of the education system as indicated in Table II. Since the system provides pupils

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3. I owe this chart to Morton Marcus, Information Requirements for Education Decisions, Institute of Government and Public Affairs, University of California, Los Angeles, MR-5.

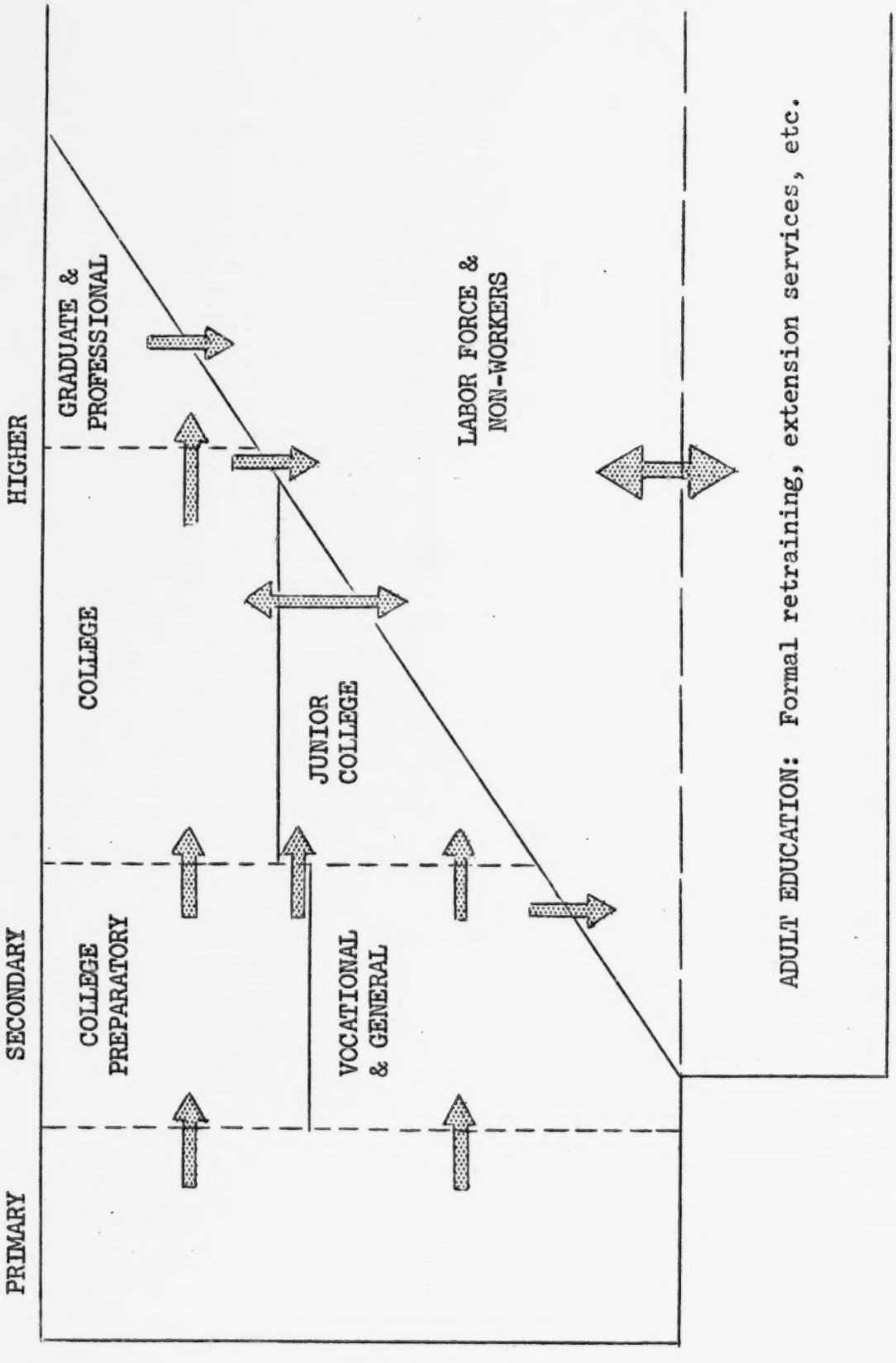

Figure 2 -- LIFETIME FLOW OF STUDENTS THROUGH THE EDUCATION SYSTEM

Table II

PROGRAMS IN AN IDEALIZED EDUCATION BUDGET

	1963	1964	1965	1966	1967
Primary Education (see Table III)					
Secondary Education					
College Preparatory					
Vocational					
Higher Education					
Junior Colleges					
Liberal Arts Colleges					
Universities					
Specialized Professional Schools					
Adult Education					
Refresher and Retraining for Professionals					
Education for Late-bloomers					
Education for Fuller Intellectual Participation in Social and Cultural Affairs					
Urban Extension Services					
Industrial Extension Services					
Library Services					
Research (and Development)					
International Education					

with primary education, the number of youngsters who have acquired a stock of primary education can be taken as the system's output. In the same way, the number of students with secondary and higher education, respectively, reflects system output. In a sense, the same holds for adult education. Two other education sub-programs are library services and research. They are different from the former four instructional ones, but are designated sub-programs because it would be very difficult to prorate library services and research and include them under the other sub-programs. We therefore look on library services and research as sub-programs which are supporting services of an overhead nature.

Each of the major education sub-programs can be broken down into sub-programs of a lower order. For example, secondary education can be separated in terms of its mission and activities, into college preparatory and vocational. Except in small rural high schools and private preparatory schools, the two types of education take place under the same roof, which makes expenditure separation for the two groups very difficult.

Higher education may be divided into junior colleges, liberal arts colleges, teachers' colleges, theological schools, technical schools, universities and others.

Likewise, adult education can be broken down into sub-programs of lower order. There are services for individuals who seek further education and extension services to individuals and organizations that seek knowledge of improved vocational techniques and practices. The first category has three components: 1) refresher courses for professional practitioners in medicine, law, engineering and other fields which face a rapid rate of change in the stock of knowledge; 2) courses for the late-comers and late-bloomers who, after leaving the formal educational structure, find new needs and new meaning

in education; 3) courses for those who seek a fuller life in a society that offers more leisure and more opportunities for individual expression.

Extension services, patterned after those already offered successfully for agriculture, could serve 4) those individuals and communities in urban areas interested in improving and preserving the positive attributes of urban society. Finally, one can envision 5) an industrial extension service that would bring specialized education to small business concerns to help them adjust to competition under rapidly changing market conditions.

As noted earlier, programs may be specified in great detail for the analysis of close alternatives. For example, one sub-program under primary and secondary education in Table II could be education for special groups such as the physically handicapped, the emotionally disturbed, the mentally retarded or the culturally deprived as shown in Table III. Taking the latter sub-program we can further indicate competing and complementary modes of enabling children from social environments inimicable to satisfactory development in the schools to derive the benefits of education. The federal War on Poverty effort, Operation Headstart, is one such attempt that uses the techniques of early entry into the school system. But others are possible: Tutorial assistance would involve close working relationships between pupils and other older students or teachers' aides; this effort could be carried out in the school, in the home or in a special environment such as a camp or a neighborhood center. Educators and psychologists will no doubt be able to discuss the relative effectiveness of each of these possibilities. Another alternative to the Operation Headstart is a program of family orientation to schools and educational values and procedures; different locales again may be suggested for this attempt to affect the home environment of the child. Finally, the problem may be approached through the mass media

Table III

A SAMPLE SUB-PROGRAM IN AN IDEALIZED EDUCATION BUDGET

Primary and Secondary

Education for Special Groups

Handicapped

Culturally Deprived

Operation Headstart -- Early Entry

Tutorial Assistance

In School

At Home

Special Environment

Family Orientation

Residential Centered

School Centered

Neighborhood Centered

Mass Media

which may be in a better position to obtain the attention of the child, his family and his neighbors than the schools or their representatives.

Analytical Aspects

Traditional education expenditure figures for the programs discussed above fall far short of including all the cost information decision makers would like to have. Meaningful costs of educacion include the following elements:

1. Direct operating costs, i.e., salaries and wages, and purchases of non-durable commodities and current services.
2. Imputed operating costs, i.e., foregone earnings of students while in school, and miscellaneous expenses to students and their parents.
3. Capital resource costs, i.e., the value of the capital stock employed.

While the first and third need little elaboration, it may be well to say a few words about the second. Full-time higher education forces students to forgo the opportunity to work full time. Foregone earnings are the difference between full-time earnings received when not in college and any wages received while attending college. Whether or not students could find employment would depend on their skills, the supply of such skills already on the market and the demand of these skills in the economy. Thus, the overall employment picture of the economy has a strong bearing on this cost element. Students also require books, assorted supplies, clothing, transportation, because they are in school. To the extent that these needs are not met by public expenditures, either the students or their parents bear the resultant costs.

In order to aid long-range planning, it is desirable to have the education program budget extend over as long as a five-year period, particularly

if major investments are to be included.

Let us now turn to the subject of benefits. We can look on the benefits of education as the increased resources available to society, those which contribute both to society's economic well-being and those which are embodied in the educated person and permit him to participate more fully in society.

Foremost among the tangible benefits of education is the students' incremental output. In a competitive economy, the individual's incremental earnings represent the added social value generated by investment in his education. Education can alter the skill composition of the labor force, it can increase the responsiveness of labor to the economy's changing requirements. Thus, incremental earnings will reflect not only the general employment picture, but also the sensitivity of the schools and students to short- and long-term labor market conditions.

Another type of benefit may be, for example, in the employment effect of universal junior college education in terms of the job opportunities for others which arise when members of the labor force enter junior college on a full-time basis.

The childcare services provided by primary and secondary schools, and which in turn offer employment to mothers, also produce benefits.

Another tangible benefit is the decline in demands for public services, resulting from less social and personal disorders, traceable to more adequate schooling. Thus, the demand for police for handling youthful delinquency may well decline if additional education expenditures permit these youths to further their education and find jobs. But if school attendance merely diminishes the current delinquency threat, education is merely disguised incarceration being substituted for protective services.

A less tangible class of benefits is in the form of education-induced increments in the social value of second parties. Thus, children who grow up in a home environment that encourages intellectual growth and expression may contribute more to society than those whose early training neglects or rejects such values. Co-workers of the educated students can also be considered second-party beneficiaries when informal education (through association, emulation, imitation and encouragement) increases output.

Finally, there are long-term community and personal benefits. These are mainly intangible, and their manifestations are complex, circuitous, and hard to isolate. These benefits include improved operation of a democratic government, an advanced technologically-oriented economy, and an aesthetically enriched culture -- all of which benefit all members of society. These benefits are major, but at present cannot be expressed in quantitative terms.

Administrative-Organizational Aspects

Education officials and the public are continually faced in our changing society with a number of major issues calling for decisions: What knowledge and skills should be developed; when, where, how, by whom, and for whom? Or, to put it differently: In a given year, what kind of education should be offered for how many students, by how many teachers and support personnel, having what background and training, and in what facilities? And who should pay for this education?

In clarifying these issues, one must not forget the great tradition of our country. We in the United States make available free primary and secondary education to every American, and provide the opportunity for free higher education to most of those who have the ability to benefit from

it. Also, the United States operates under a federated political and fiscal system. These concepts reflect our basic philosophy of life, and provide the setting within which education decisions must be made. They also make the process of education decision making and administration a much more complicated business than it is in a country having a monolithic form of government. In the latter case the head of state together with the legislature decide on the overall investment level of the country, but the education ministry submits recommendations about the level of investment in education. In doing so, it must establish priorities and make decisions about how much money and how much skilled manpower of different types is to be allocated to each level: primary, secondary, higher and adult education. But in this country many decide these issues and their interests are often in conflict with each other.

Under a centralized fiscal system the major funding issue is how to allocate financial burdens to the various income levels of the population. With our federated fiscal system, we face all these decisions plus additional ones. For example, the launching of the first Sputnik was unlikely to have induced many school districts to adjust their curriculum. However, it persuaded the United States government to offer financial support to education in science and engineering. This decision was not supported by many educators at other levels where its benefits may have appeared questionable, and the wisdom of this step has continued to this day to be the subject of hot debate.

Major decisions must be made about the role private and different types of public contributions should play in educating American youth: Who should offer what education? Who should finance it and how? Criteria are needed for both types of decisions. Until recently, the Federal government played

a minor direct role, and even then primarily as a source of funds. Its role has been increasing however, and even limited Federal funds can have far-reaching effects on educational efforts throughout the land. Depending on the way Federal funds are disbursed they can induce state and local governments, and private contributors, e.g., through fund-matching agreements, to exert greater financial efforts, to improve teaching, to switch their curriculum, to augment their library holdings, to retrain Americans, etc.

Effective program budgeting for American education will require administrative changes in Federal and State governments, in local school districts, and in private education institutions. Each program budgeting office, while planning its own program, must also take explicit cognizance of others affecting the education in a significant way. In short, integrated program information is needed.

Program budgeting will call for a good deal of centralization within administrative units. This could bring serious disadvantages. Central education officials might feel less pressure to consider alternatives, more pressure simply to see that decisions are made. This climate could stifle innovations in curriculum, teaching methods, supervision, etc. It could lead to over-management from the top. It could lead to a neglect of substitution possibilities and alternative courses of action throughout the hierarchy.

Perhaps the principal way to guard against such hazards would be to use the program budget in a way that would leave considerable authority at lower levels, and that would emphasize the program budget as an effective information system. Program budgeting might be introduced in a way that would not increase, but would actually check centralization. It might be set up mainly to help officials reach decisions and implement major program choices, but

not as an instrument for control of details. If used to implement major allocative choices, it should be designed to permit considerable flexibility at other levels. Such use would doubtless involve some sort of control over reprogramming or program change proposals at some dollar threshold. (For example, if a change would alter a program by an amount or percentage greater than an established threshold, higher authority approval would be required.) These thresholds could be set relatively high to ensure that lower-level officials retain some decision-making authority, for the sake of both flexibility and incentive.

If a program budget were to be adopted, a conventional administrative budget would have to be prepared side by side with it in a way which would allow cross-referencing between items. This is because the traditional budget, organized along department lines, would still be required for a number of purposes -- unless much of the government structure itself were reorganized along lines more compatable with the program budget.

Even if we do not have a Department of Education which is responsible for all education activities in which the Federal government is involved, it could be possible to have offices with specific coordinating responsibilities. Just as the director of the Office of Economic Opportunity coordinates the planning and budgeting of all Federal anti-poverty activities, an "executive agent" could be appointed for a similar task with regard to education. Fortunately, a single administrative unit is, in most cases, responsible for education in the case of state, local, and private units.

Since there is a need for joint, coordinated education planning, perhaps we should establish an effective Coordinating Council for American Education made up of key representatives of Federal, State, local and private education. The Council could have a staff which would produce

background information, and standardize budgeting and planning tools, procedures, and formats. The Coordinating Council would, in turn, use this information in joint planning for quality, diversity, and efficiency in American education.

NATIONAL EDUCATION PROGRAM BUDGET

To this point we have discussed the major attributes and difficulties of program budgeting for education. It has been noted that the program budget is but one informative device decision makers would rely on for choosing among alternatives in education and implementing their selections. Figure 3 summarizes in graphic form much of this discussion. In the upper left quarter of Figure 3 is a flow of funds statement that indicates in each row the type of unit that makes a decision to allocate funds to education for a series of years and in the columns the unit that secures these resources in the economy. For example, the total funds that the Federal government allocates for education is far greater than the amount that unit spends, because State and local governments actually are charged with purchasing education inputs with the Federal monies. In the upper right quarter of Figure 3 is a program budget much like that of Table II. For simplicity we have not shown the decision-making units involved, but one can imagine either a budget of this nature for each of the units in the rows of the flow of funds matrix or a Federal, State, etc. line for each program.

Planning and management require more than a knowledge of the monetary commitments of each sector for particular programs. Hence in the lower left quarter of Figure 3 we have shown the physical resources purchased by each expenditure unit. In the United States we would find that most of the

Source of Funds \ Expenditure Unit / Year	Flow of Funds: FEDERAL 60	61	62	STATE 60	61	62	LOCAL 60	61	62	PRIVATE 60	61	62	TOTAL 60	61	62
FEDERAL															
STATE															
LOCAL															
PRIVATE															
TOTAL															
Inputs															
Personnel Academic Non-academic Students															
Capital facilities Classrooms															
Instructional materials Books Computer hours															

Program Budget (Dollars)	60	61	62
Primary & Secondary Education			
Higher Education			
Adult Education			
Library Services			
Research & Development			
International Education			
TOTAL			

Program Budget (Physical Units)	60	61	62
Primary & Secondary Education			
Higher Education			
Adult Education			
Library Services			
Research & Development			
International Education			

Figure 3 -- PROGRAMMING TOOLS FOR NATIONAL EDUCATION DECISIONS

expenditures for education inputs are made by local governments. The school boards actually buy the services of academic and non-academic personnel on the primary and secondary levels. For a comprehensive view of the resources devoted to specific programs we then need more than the fiscal data of the program budget in dollars, we require a program budget in physical units as shown in the lower right quarter of Figure 3. A set of accounts such as the four shown here would provide decision makers with some of the information necessary to program analysis and trade-off decisions.

We are far from having such tools, however. A beginning toward developing a national education program budget is presented in Table IV. This should be looked on merely as an informative example especially germane to Federal education officials. (Ideally, of course, the program budget data, covering here only fiscal year 1963, should extend beyond a single year.) Each sub-program occupies a row. Empirical difficulties with data forced us to combine primary and secondary education. However, we have made an effort to separate estimates of current and capital expenditures for the two major sub-programs, primary and secondary education, and higher education.

Under fiscal federalism, and with a large private sector in education, budgetary complexities arise. For decision purposes, it is important to recognize the difference between who directly controls the spending of education funds and who raises these funds. Otherwise, the intensions of the money allocators may not be realized by the acts of the final resource buyers. Thus, for example, while the Federal government in fiscal year 1963 raised $4.3 billion for education, it spent directly virtually no funds on primary and secondary education. Instead, it made them available to private and to

Table IV

AN EDUCATION PROGRAM BUDGET FOR THE UNITED STATES, FISCAL 1963
By three sectors and two types of control of institutions

(in billions of dollars)

	1	2	3	4	5	6	7
Programs & Components	Total	Type of Control: Public	Type of Control: Private	All Govts.	Federal Govt.	State & Local Govts.	Private Sector
Primary & Secondary Educ.	22.1	19.5	2.6	19.5	1.0	18.5	2.6
Current	18.9	16.7	2.2	16.5	.9	15.6	2.3
Capital	3.2	2.8	.4	3.0	.1	2.9	.2
Higher Education	8.9	5.3	3.6	5.9	1.8	4.1	3.0
Current	7.1	4.0	3.1	4.3	1.4	2.9	2.8
Capital	1.8	1.3	.5	1.6	.4	1.2	.2
Adult Education	.4	N.A.	N.A.	.4	.2	.1	N
Library Services	.2	N.A.	N.A.	.2	.02	.2	N
Research & Development	1.6	N.A.	N.A.	1.4	1.2	.3	.2
International Education	.06	N.A.	N.A.	.06	.06	N	N.A.
Total All Programs	33.3	24.8	6.2	27.5	4.3	23.2	5.8

Details may not add to totals due to rounding.

N: Negligible
N.A.: Not available for specific allocation.

local and State government-operated educational institutions. Likewise, states raise funds for primary and secondary education, but operate neither grammar nor high schools.

Column 1 of Table IV is a summary of all program expenditures, adding up to $33.3 billion. Columns 2 and 3 show what programmatic expenditures were controlled directly by public and private educational institutions, respectively. They show, for example, that in money terms, private institutions are much more important in higher than in primary and secondary education.

Columns 4-7 present information on fund sources: Federal, State and local governments, and the private sector. For example, they reveal that of the $8.9 billion spent in fiscal year 1963 on higher education, governments raised $5.9 billion -- $4.1 billion by State and local governments, and $1.8 billion by the Federal government -- while the private sector accounted for $3.0 billion.

We have made an effort to provide current and capital expenditures for the two large sub-programs -- primary and secondary education, and higher education. Thus, in fiscal year 1963 $18.9 billion of total primary and secondary education expenditures were to cover current expenditures and $3.2 billion were for capital outlays. Similarly, the figures for higher education were $7.1 billion and $1.8 billion. From this we learn that capital outlays were relatively more important at this time in higher than in primary and secondary education. Table IV gives us further insight. For example, the ratio of current expenditure to capital expenditure is not very different for primary and secondary education for either private or public institutions; this is not true for higher education. Public institutions of higher learning spent relatively more on capital improvements than did private institutions.

We might also want to consider the national education budget mix. In fiscal year 1963 about two-thirds of national education expenditures went for primary and secondary education, while higher education captured about another fourth. Research accounted for about five percent. The other three sub-programs -- adult education, library services, and international education -- together accounted for a mere 2 percent.

Is this a good budget mix? Could the nation benefit from changing the mix, or level of support, in favor of, for instance, adult education? As a matter of fact, the nation appears to have reached just that conclusion in 1963 and within two years tripled the adult education budget.

Let us now look at a possible breakdown of the national higher education sub-program -- universities, liberal arts colleges, junior colleges and other institutions, e.g., teachers' colleges, technological schools, etc. Fiscal year 1963 budget estimates for these four sub-programs are summarized in Table V.

Of the $8.9 billion national higher education budget, we estimate that about $5.2 billion were spent by universities, $1.8 billion by liberal arts colleges, one-half billion by junior colleges, and the remaining $1.5 billion by such institutions as teachers' colleges, technological schools, theological schools, etc. Here, too, the question can be raised whether we have the most appropriate expenditure unit. Clearly the output of these institutions are in some respects quite similar, while in others they serve distinctly different functions. This overlapping results from a myriad of decisions -- mostly independent from one another.

Table V

HIGHER EDUCATION IN THE NATIONAL EDUCATION PROGRAM BUDGET
For Fiscal Years 1960, 1962, 1963 & 1964

(expenditures in millions of dollars)

Higher Education Program Elements	1960	1962	1963	1964
Universities	4323.5	5066.0	5197.6	5606.4
Liberal Arts Colleges	1454.4	1771.3	1788.9	1929.6
Junior Colleges	359.4	496.0	489.5	528.0
Other Institutions*	1197.7	1523.4	1424.0	1536.0
Higher Education: Total	7334.2	8856.7	8900.0	9600.0

Source: 1) Statistics of Higher Education 1957-58, Receipts, Expenditures and Property, chapter 4, Section II, U.S. Dept. of H.E. & W., Office of Education. 2) Digest of Educational Statistics, 1964 edition, U.S. Dept. of H.E. & W., Office of Education. 3) Statistical abstracts of the U.S., U.S. Dept. of Commerce, Bureau of the Census, 1958, 1959, 1960, 1962, 1963 and 1964. 4) U.S. Education Program Budget, 4 Sectors and 2 Types of Control of Institutions, 1960, 1962, 1963 and 1964, formulated and arranged by B. P. Pai, Institute of Government and Public Affairs, University of California, Los Angeles. These estimates were based on costs per student and enrollment data.

*Other institutions include Teachers' colleges, technological schools, theological schools, other professional schools, technical institutes and semi-professional schools.

SOME APPLICATIONS

First we will explore the possibility of using the program budget format to project education expenditures. We will then seek some ways to illustrate how the program budgeting process, and especially its analytical element, can help define and facilitate major education decisions.

Projecting Education Expenditures

By arranging all education expenditures in program form, and according to who controls and who raises the funds, we have a basis for examining each sub-program in detail and projecting it into the future. Time series data for each component can be a point of departure for projections. Later component data can be aggregated into meaningful totals.

We will not describe here specific projection techniques nor offer actual projections. Instead we will examine time series, first of some education sub-programs of different levels of aggregation, and then of select education sub-programs. Table VI presents for fiscal years 1960 and 1962 through 1965 expenditure data for six major education sub-programs in terms of the four sectors that fund these expenditures. Distinctly different growth rates can be discerned; the relative growth of some of the smaller sub-programs stands out. In the sixties, so far, expenditures have quadrupled for library services, tripled for adult education, more than doubled for research, and doubled for international education. But even in primary and secondary education and higher education increases have been substantial, i.e., about 29 and 48 percent, respectively, in 6 years. Research expenditures, which had doubled between 1960 and 1963, hence appear to have levelled off in the past two years.

Table VI
CONSOLIDATED U.S. EDUCATION PROGRAM BUDGET: BY 4 SECTORS & 6 PROGRAMS
For Fiscal Years 1960, 1962 Through 1965
(in billions of dollars)

		Total All Programs	Primary & Secondary Education	Higher Education	Adult Education	Library Services	Research & Development	International Education
All Sectors	Total							
	1960	28.7	19.9	7.3	.4	.1	.8	.05
	1962	31.4	20.7	8.9	.3	.2	1.3	.06
	1963	33.3	22.1	8.9	.4	.2	1.6	.06
	1964	36.3	24.0	9.6	.5	.2	1.9	.06
(est.)	1965	40.1	25.7	10.8	1.2	.4	1.9	.1
All Governments	Total							
	1960	21.8	17.5	3.0	.4	.1	.7	.05
	1962	24.1	17.5	5.0	.3	.2	1.1	.06
	1963	27.5	19.5	5.9	.4	.2	1.4	.06
	1964	30.3	20.5	7.5	.5	.2	1.5	.06
(est.)	1965	33.8	21.8	8.8	1.2	.4	1.5	.1
Federal Gov't.	Total							
	1960	2.8	.8	1.1	.3	.02	.5	.05
	1962	3.6	.9	1.5	.2	.02	.9	.06
	1963	4.3	1.0	1.8	.2	.02	1.2	.06
	1964	4.7	1.1	2.0	.3	.03	1.2	.06
(est.)	1965	6.5	1.4	2.8	.9	.07	1.2	.1
State & Local Gov't.	Total							
	1960	18.9	16.6	1.9	.1	.1	.2	--
	1962	20.5	16.5	3.5	.1	.1	.2	--
	1963	23.2	18.5	4.1	.1	.2	.3	--
	1964	25.6	19.4	5.5	.2	.2	.3	--
(est.)	1965	27.3	20.4	6.0	.3	.3	.3	--
Private Sector	Total							
	1960	6.9	2.5	4.3	--	--	.1	--
	1962	7.3	3.3	3.8	--	--	.2	--
	1963	5.9	2.6	3.0	--	--	.2	--
	1964	6.2	3.8	2.1	--	--	.3	--
(est.)	1965	6.2	3.9	2.0	--	--	.3	--

In virtually all cases, the Federal government has been largely responsible for the changes. During this period its contributions to education increased by more than 130 percent.

The changing role of the Federal government can also be seen in Table VII where Federal funds are arranged by the major sub-programs used earlier (primary and secondary, higher, etc.), and by the nature of support (grants and loans, across-the-board, and special support). Spurred by the domestic advances in technology and by international competition (Sputnik), Federal support for research and development went from 17 to 27 percent of all Federal grants during the period 1959-1963. In the last two years, particularly with the major education effort of this most recent year, R & D has returned to less than one-fifth of total Federal grants. In higher education, support for special groups has declined in importance, from 16 percent in 1959 of total grants to 3 percent in 1965; at the same time indirect support through R & D and across-the-board direct support have grown in relative importance indicating a new policy direction. Yet in primary and secondary education across-the-board direct support has remained at about 3 percent of total Federal grants. These data clearly reveal the declining relative emphasis in the Federal education effort in the pre-college years. One may wonder if this reflects a course of least resistance by the Federal authorities to stimulate higher levels of education effort by the nation or a clear appraisal of the areas most likely to have major payoffs for our education investments today.

By organizing expenditure of the sort presented here, and hopefully social cost data along major mission lines -- sub-programs and sub-sub-programs with specified objectives -- we can gain a solid basis for projections. We can seek out expert advise about the likely future importance of specific

Table VII

FEDERAL EDUCATION PROGRAM BUDGET ARRANGED BY NATURE OF SUPPORT FOR FISCAL YEARS 1959 THROUGH 1965

(obligations in millions of dollars)

Programs and Nature of Support	1959	1960	1961	1962	1963	1964	1965
I. Grants, etc. -- Total	2,419	2,563	2,682	3,157	3,795	4,341	5,901
A. Primary and Secondary Ed. -- Total	697	817	816	932	999	1,090	1,363
1. Across-the-Board Direct Support	84	111	98	115	126	152	160
2. Support in lieu of Taxes	251	299	318	346	378	385	424
3. Support for Special Groups*	59	76	65	68	79	100	216
4. Support for Special Education**	24	24	23	30	30	34	90
5. Indirect Support	280	307	313	374	386	419	434
B. Higher Education -- Total	887	875	913	1,049	1,340	1,574	2,208
1. Across-the-Board Support	266	327	392	468	565	706	1,219
2. Support for Special Groups	411	298	213	160	126	172	209
3. Indirect Support Through R & D	211	250	308	421	648	695	781
C. Adult Education -- Total	328	253	195	184	215	334	901
1. Support for Special Groups	328	253	195	184	215	334	901

Table VII (continued).

Programs and Nature of Support	1959	1960	1961	1962	1963	1964	1965
D. Library Services -- Total	16	19	21	22	24	24	74
1. Across-the-Board Direct Support***	14	17	18	18	19	8	55
2. Support for Special Groups***	2	2	3	4	5	17	19
E. Research & Development -- Total	451	546	680	912	1,155	1,192	1,227
F. International Education	39	53	57	58	63	127	128
II. Loans -- Total	186	222	378	439	482	399	621
A. Primary and Secondary Ed. -- Total	N	N	1	1	1	1	1
B. Higher Education -- Total	185	222	377	438	481	398	620
Total Grants and Loans	2,604	2,786	3,060	3,596	4,277	4,740	6,522

Source: Department of Health, Education and Welfare, Office of Education, Annual Survey, Federal Funds for Education and Related Activities, and independent estimates.

N: Negligible -- less than $500,000.

*The pre-school and in-school youth programs under the Economic Opportunity Act for Primary and Secondary Education have been included under Support for Special Groups (IA3).

**Educational Television Facilities, included also under Primary and Secondary Education has been classified as IA4 Support for Special Education.

***In 1959 through 1963 grants to Library of Congress were included under ID1, Across-the-Board Support, but in 1964 and 1965 they are included under ID2, Support for Special Groups, as they are consolidated with National Library Services.

missions and about the methods by which they are likely to be performed. On the basis of this information and some statistical functions, budgetary projections can be made.

Elucidating Education Decisions

Education planning in the United States is complicated by the fact that three levels of government, as well as private institutions, play important roles which affect one another. State governments and local districts raise and spend most of the education dollars. Although the Federal government has been the junior partner, its importance has been on the increase. While the U.S. Office of Education is technically correct in stating that it "has no role in any management decisions process concerning educational operations," its decisions are, in fact, felt throughout the land.[4] This has been particularly true for the last 2-3 years. Federal education funds have increased within a six-year period from $2.8 billion or 10 percent of all education expenditures in fiscal year 1960, to $6.5 billion or 16 percent. In fiscal year 1965, about 21 percent of Federal funds were allocated to primary and secondary education, while higher education, if we include research funds, accounted for more than 60 percent. Federal funding for adult education has quadrupled in the last four years, amounting to about 14 percent for 1965.

These trends raise a number of questions. For example, should the Federal government spend only $1.4 on primary and secondary education? The Federal contribution here has steadily declined from about 30 percent of total Federal education funds in fiscal year 1960 to about 21 percent in 1965. In view of

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4. Labor-Health, Education and Welfare Appropriations for 1966, Hearings before the Subcommittee of the Committee on Appropriations, U.S. Senate, 89th Congress, 1st Session, p. 156.

the multiplier effect Federal education funds can have in stimulating expenditures by other decision-making units, should Federal funds be increased across-the-board? What kind of support elicits the most positive response from other government levels? Or should they be earmarked for special purposes or needy groups? Is the 1965 Federal expenditure of $73 million for vocational high school education, although tripled in one year, high enough to meet the increased demand for skilled workers?

Finally, by way of example, let us illustrate in some detail how we can use parts of an education program budget, in conjunction with benefit-cost analysis, to evaluate a policy proposal made early in 1965.5/

The program budget in Table III includes estimated expenditure for the junior college sub-program. Benefit-cost analysis requires the addition of further cost information if it is to approach a reasonable estimate of total social costs. Further, benefit or output information needed for making allocation decisions is not included in the program budget, but must be and must be obtained separately.

Relevant social cost components of education have been discussed above on page 19. Of these, only operating costs, foregone earnings, some capital costs, and miscellaneous costs will be estimated in this example. We assume that students are 18 years old when they enter college on a full-time basis the semester following graduation from high school, and that they remain in college for two years. Operating and capital costs are assumed to equal the average cost per full-time equivalent degree-credit student, with capital costs computed at eight percent of the value of the physical plant. Foregone

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5. The Education Policies Commission, Universal Opportunity for Education Beyond the High School (Washington, D.C.: National Education Association, 1964).

earnings are taken as the difference between the median income of persons 18 and 19 years old with one to three years of college, and the median income of those having only four years of high school education. Miscellaneous costs include only fees, books and school supplies. Students are assumed to live at home. All costs are for two years of college, with the second year's value discounted at a rate of five percent.

Some of the broad social benefits of education have been explored above, already discussed (page 20). Benefit estimates in this example are restricted to the incremental income a student can expect as a result of a two-year junior college education.

Adjustments are made for labor force participation rates, and the differential stream of future income is discounted at a rate of five percent.

On the basis of these and further limiting assumptions, two years of junior college education are estimated to have a benefit-cost ratio for male students of 1.95 as an upper bound and .91 as a lower bound. Thus, a male student's attendance in junior college for two years yields a return between 1.95 and .91 cents for every dollar invested. The return for females is less than half of that of males, with the upper bound of the benefit-cost ratio .89 and the lower bound .42. These low monetary returns are due to low rates of labor force participation for females in the years 25-35.

Looking at these aggregate costs and benefits, quantified to this point, of a universal junior college education program for the United States, we come up with the following estimates: annual costs are likely to range from 1.6 to 2.6 billion dollars while benefits are likely to range from one billion to 3.2 billion dollars, depending on the assumptions. Thus, we are led to ask if the local governments which finance junior colleges at present expected to collect between 1.5 and 3 additional billions from their already pressed

taxpayer for such a program? Are the states prepared to meet this cost, or at least in part? Or is the Federal government prepared to increase its education budget by one-third or more to finance this program in preference to others? Are there other programs that could more readily attain the same objective?

One alternative program has been investigated.6/ It involves a program, during high school, of five summers equivalent to one year of higher education. In 1960, such a program for male students would have produced a benefit-cost ratio above 3.23, as compared with the upper bound 1.25 benefit-cost ratio for junior college education. For female students the summer program would produce a benefit-cost ratio of 1.47, compared with the .89 for the junior college program.

CONCLUSIONS

Education expenditures are incurred by more than 40 agencies of the Federal government. In addition, 50 state governments and more than 30,000 school districts finance education in the United States. Thus, planning and budgeting education in an efficient and equitable way is a formidable task.

This paper has suggested that the management process known as program budgeting can perhaps offer us major help here. Certainly, it is no panacea, and it may have shortcomings or doubtful aspects which need to be examined further; for example, its dependence on centralization, and its assumption

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6. For details see Werner Z. Hirsch and Morton J. Marcus, Some Benefit-Cost Considerations of Universal Junior College Education, (Los Angeles: University of California, Institute of Government and Public Affairs, 1965), MR-47, 18 pages.

that we do indeed wish to strive toward objective rational decision making in this area.

It is the judgement here, however, that program budgeting does in fact hold great promise. On the other hand, it requires further research and development along a number of lines -- further explicit delineation of goals; better identification, measuring, and packaging of costs and of benefits; the development of backup administrative organization, more attention to future environments; to name but a few.

But meanwhile there appear to be constructive steps we can take that will help us toward the better management of our vast education industry. Let me mention some.

The creation of a new Federal Department of Education is a possibility which has its pros and cons; most likely the pros outweigh the cons. But even such a step will not <u>assure</u> better education planning and administration within our system of political and fiscal federalism. The Federal government can use its good offices, together with financial carrots, to induce more states and school districts to prepare program budgets for education. This would mean more attention to outputs and their long-term cost implications.

The creation of a Coordinating Council for American Education, properly financed and staffed, could also be a step in the right direction.

It might be desirable to establish a yearly Presidential report on education through the executive Office of the President, assisted by the Bureau of the Budget and the Office of Education. The report could address itself to the substance, organization, costs, goals, problems, and progress of education in the United States; it could highlight where we have been in education, where we are now, where we want to go, why, and the rate of investment and other commitments. Such a report should deal with the roles of both private

and government sectors in terms of both support and performance; it should contain along with quantified data, philosophical and qualitative inquiry as well.

Such a report would help us view education within an integrated framework. It could be treated by Congress in about the same way the economic report is treated. Public hearings and testimonies could be held by the Education Committees of both Houses of Congress, preferably on a joint basis. The report would be invaluable to the 50 states and our local school districts. They could relate this annual statement directly to their own programs and problems, and possibly issue their own report to be taken up by their own legislative units. If nothing else, such a report would force us to take a global, comprehensive look at education, preferably related to research and science as well as other programs of major national concern.